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## HIGH RESOLUTION INDUCTIVE SENSOR ARRAYS FOR MATERIAL AND DEFECT CHARACTERIZATION OF WELDS

### RELATED APPLICATIONS

- 5 This application is a divisional of U.S. Application No. 10/046,925, filed  
January 15, 2002, which is a continuation-in-part of U.S. Application No. 09/891,091,  
filed June 25, 2001, which claims the benefit of U.S. Provisional Application No.  
60/214,177, filed June 26, 2000, U.S. Provisional Application No. 60/248,104, filed  
November 13, 2000, U.S. Provisional Application No. 60/276,997, filed March 19,  
10 2001, U.S. Provisional Application No. 60/277,532, filed March 21, 2001, U.S.  
Provisional Application No. 60/284,972, filed April 19, 2001, and U.S. Provisional  
Application No. 60/297,926, filed June 13, 2001. The entire teachings of the above  
applications are incorporated herein by reference.

*now patent NO. US6727691*

### 15 BACKGROUND

The technical field of this invention is that of nondestructive materials  
characterization, particularly as it applies to postweld and in-process weld scanning for  
quality control, in-process monitoring, and seam tracking using spatially periodic field  
eddy current sensors.

- 20 There is an increasing need for a nondestructive method for assessing the quality  
of welds between materials, including the detection and characterization of defects. In  
particular, friction stir welding is becoming more commonly used as a joining technique  
for a variety of metals, including aluminum, titanium and nickel base alloys as well as